

experience with Waterloo students, they tend to have a more expansive worldview and are more mature than typical new college graduates—arguably due to their broad and deep experience base.



So let us imagine optimizing the model that Waterloo has already begun. Imagine a new university in Silicon Valley—it doesn't have to be here but it will help to make things concrete. I am a big believer that inspiring physical spaces and rich community really do elevate and develop one's thinking. So we'll put in dormitories, nicely manicured outdoor spaces, and as many areas that facilitate interaction and collaboration as possible. Students would be encouraged to start clubs and organize intellectual events. So far, this is not so different from your typical residential college.

What is completely different is where and how the students spend their days. Rather than taking notes in lecture halls, these students will be actively learning through real-world intellectual projects. A student could spend five months at Google optimizing a search algorithm. She might spend another six months at Microsoft working on human speech recognition. The next four months could be spent apprenticing under a designer at Apple, followed by a year of building her own mobile applications. Six months could be spent doing biomedical research at a start-up or even at another university like Stanford. Another four months could be spent prototyping and patenting an invention. Students could also apprentice with venture capitalists and successful entrepreneurs, eventu-

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ally leading to attempts to start their own businesses. One of the primary roles of the college itself would be to make sure that the internships are challenging and intellectual; that they truly do support a student's development.

All of this will be tied together with a self-paced academic scaffold through something like the Khan Academy. Students will also still be expected to have a broad background in the arts and deep proficiency in the sciences; it will just be done in a more natural way. They will be motivated to formally learn about linear algebra when working on a computer graphics apprenticeship at Pixar or Electronic Arts. They will want to learn accounting when working under the CFO of a publicly traded company. Ungraded seminars will be held regularly during nights and weekends when students can enjoy and discuss great works of literature and art. If the students decide that they want to prove their academic ability within a domain—like algorithms or French history—they can sign up for the rigorous assessments we discussed in the last chapter.

Let me stress the notion of ungraded seminars in the arts, because I think it would lead to more appreciation of the humanities than what goes on in traditional colleges. Take a look at literature. In most colleges and high schools, students are forced to read great works—or at least those deemed great by their professors. They do this within a deadline-based setting where they have to read two hundred pages by Friday. And this is while they have a lot of other work to do from their other classes. At the end of the reading, they must participate in a discussion or take an exam or write a paper—which is graded. Given all of this artificial structure and assessment around a

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work of literature, do we really think the student has time to appreciate and enjoy it? Is the point here really to see who can read two hundred pages by Friday and impress a professor on an essay to get an A? Look at the graduates who used their straight A's in comparative literature, history, or political science to get a competitive position in investment banking, law, medicine, or consulting. How much do they remember, much less read and appreciate, the classics now? Many of the ones I know haven't read a major work of literature since college.

I feel strongly about this because when I was in school I was not a fan of the forced reading for a paper and/or exam around an artificial timeline. It made me, and my peers, treat amazing works of art as busywork that was standing between us and our grades/diplomas/jobs. We've already talked about how forcing math down students' throats according to an artificially imposed one-pace-fits-all curriculum causes them to dislike it. It is even worse in the humanities. One can appreciate and internalize neither logarithms nor Thoreau if they are forced at an artificial pace. This is why so many students—often boys—have something approaching post-traumatic stress disorder when someone brings up *Wuthering Heights* or *Moby Dick*. When Newton or Gauss explored mathematics that unlocked mysteries of their universe, their intent was to empower—and maybe inspire—humanity. The goals of Twain, Dickens, or Austen were similar: to deeply entertain while opening our eyes and minds. Neither the great mathematicians' nor the great writers' goal was to create tools of torture for high school or college students—but that is how many students have grown to view their work.